

REMARKS**I. General**

Claims 1-3, 5-15, and 17-23 are pending in the application, and all are finally rejected by the Office Action mailed November, 30, 2005. The issues in the Final Action are as follows:

- Claim 1-3, 5-15, and 17-23 are rejected under 35 U.S.C. § 103(a) as being anticipated by US 5,898,517 (hereinafter, *Weis*).

Applicant hereby traverses the rejections and requests reconsideration and withdrawal in light of the remarks contained herein.

II. Applicant's Record Under M.P.E.P. § 713.04 of Interview with the Examiner

Applicant's attorney appreciates the Examiners' time and consideration in conducting the telephone interview of January 17, 2006. Applicant respectfully submits the following record of the telephone interview under M.P.E.P. § 713.04.

The following persons participated in the interview: Examiner Rich Hanig, Inventor Rory Van Tuyl, and Applicant's Attorney Thomas Kelton (reg# 54,214). Applicant thanks the Examiner for the interview, especially in light of the finality of the Office Action.

The inventor described the creative process behind various embodiments of the invention and shortcomings of the prior art. The Examiner offered to do another search for claims 1-3, 5-15, and 17-21 if Applicant canceled claims 22 and 23 and provided other concessions. Applicant's attorney agreed to present the offer to the Applicant. While Applicant is grateful for the offer, Applicant believes that claims 22 and 23 are patentable over the art of record and, therefore, chooses to submit arguments herein rather than accept the Examiner's offer.

III. Improper Finality

The finality of this Office Action is improper, and it is hereby requested that the finality be withdrawn. M.P.E.P. §706.07(a) states:

Under present practice, second or any subsequent actions on the merits shall be final, except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims nor based on information submitted in an information disclosure statement filed during the period set forth in 37 C.F.R. 1.97(c) with the fee set forth in 37 C.F.R. 1.17(p).

The Examiner's introduction of Official Notice/personal knowledge (see page 3 of the action which states, "the interchangeability of optical modulators is well known by those skilled in the art.") was neither necessitated by amendment (it is cited against claims 1 and 15 which incorporate the limitations of previously examined and canceled claims 4 and 16, respectively), nor was the rejection based on art submitted pursuant to 37 C.F.R. 1.97(c). It should be noted that the introduction of such Official Notice/personal knowledge was not necessitated by the addition of claims 22 and 23 in the last response because the Examiner relies on the Official Notice/personal knowledge to reject claims 1-3, 5-15, and 17-21. Because the new rejection does not fall under either of the criteria set out in M.P.E.P. §706.07(a), the finality is premature. Further, the introduction of such Official Notice/personal knowledge in a final action does not provide the Applicant with a full and fair opportunity to respond. Thus, Applicant respectfully requests that the finality be withdrawn.

IV. Claim Rejections

On pages 2-3, claims 1-3, 5-15, and 17-23 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over *Weis*. Applicant traverses the rejections.

To show obviousness under 35 U.S.C. § 103(a), three basic criteria must be met. First, there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the applied reference. Second, there must be a reasonable expectation of success. Finally, the applied reference must teach or suggest all the claim limitations. *See* M.P.E.P. § 2143. Without conceding the second criterion, Applicant respectfully asserts that the rejection does not satisfy the first or third criteria, as discussed further below.

A. Lack of Motivation to Modify Weis

It is well settled that the fact that references can be combined or modified is not sufficient to establish a *prima facie* case of obviousness, M.P.E.P. § 2143.01. There must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the applied reference. *See* M.P.E.P. § 2143. As explained below, no such motivation exists.

1. Weis teaches against such a modification

There is no proper motivation to modify *Weis* by employing an electroabsorption modulator (EAM) or other optical intensity modulator, as asserted by the Final Action because *Weis* directly teaches against such a modification. “It is improper to combine references where the references each away from their combination.” M.P.E.P. §2145(X)(D)(2), *citing In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). *Weis* specifically teaches against modifying its disclosed system by using an EAM or other optical intensity modulator. The *Weis* system is a telemetry system for relaying signals from sensors located in “harsh environments,” such as high-radiation areas and in oil/gas well boreholes. *Weis* at Abstract, Col. 6, lines 32-36, and Col. 17, lines 41-50. In its Background section, *Weis* explains that modulating the intensity of a light signal (as by an EAM, one type of intensity modulator) requires “complex” circuitry that is not fit for “harsh borehole” conditions. *Id.* at Col. 2, line 62, through Col. 3, line 29, of *Weis*. Further, *Weis* teaches that systems that use intensity modulators suffer from unreliability because variations in light intensity cause false measurements. *Id.* *Weis* also teaches that using digital data can reduce the occurrence of false measurements; however, *Weis* does not teach the problem of “complex circuitry” is ameliorated by employing such digital data. Accordingly, *Weis* is unequivocal in its teaching that an EAM or other optical intensity modulator cannot be used in its system. In other words, such a modification is specifically taught against by *Weis*, and as a result, one of ordinary skill in the art would not be motivated to make the modification. Such a statement is true regardless of cost, space, and speed—the three criteria listed by the Office Action as possible reasons for making the modification.

2. Such a modification is undesirable

As mentioned above, there are various reasons why employing an EAM or other optical intensity modulator is disadvantageous. For instance, such a modulator may require “complex” circuitry that is not fit for the “harsh borehole” conditions for which the *Weis* system is adapted. *Id.* at Col. 2, line 62, through Col. 3, line 29, of *Weis*. Further, systems that use intensity modulators may suffer from unreliability because variations in light intensity cause false measurements in systems similar to that of the *Weis* system. *Id.* Accordingly, such a modification of *Weis* is undesirable, and as a result, a person of ordinary skill in the art would not be motivated to make the cited modification.

3. Examiner’s provided motivation is insufficient

The Final Action attempts to rebut Applicant’s argument in the last response by stating:

The applicant has argued...there is no motivation for using an EAM in *Weis*’ system. However, Krause et al in [0050, 0051] teach that in optical systems an EAM can be used or one with similar functionality and this is well known in the art. Barring a showing of criticality in the claimed system the interchangeability of optical modulators is well known by those skilled in the art.

Final Action at 3. However, such reasoning is incorrect for at least three reasons. First, Krause (US 2005/0062978) merely teaches a system that employs an EAM, but it does not explain why one of skill in the art would be motivated to modify the *Weis* system with an EAM. Accordingly, Krause lends no support to the proposed modification.

Second, by stating that “interchangeability of optical modulators is well known by those skilled in the art,” the Final Action attempts to ignore the teaching of *Weis* and replace it with the Examiner’s personal knowledge or Official Notice. Such interchangeability of modulators is not true, nor is it well known in the art, as evidenced by the contradictory teaching of *Weis*. Therefore, it is believed that that assertion is not capable of instant and unquestionable demonstration as being well-known, as required of Official Notice by M.P.E.P. §2144.03(A).

Alternatively, such an assertion without documentary evidence may be appropriate if the Office Action provides “specific factual findings predicated on sound technical and scientific reasoning to support his or her conclusion of common knowledge.” M.P.E.P. §2144.03(B). However, because the above-quoted statement is merely an assertion, and does not provide reasoning by making technical arguments against the teaching of *Weis*, the Official Notice must fail. Applicant further respectfully requests that the Examiner provide an affidavit or publication supporting such Notice or knowledge under M.P.E.P. § 2144.03(C) if the Examiner believes such interchangeability is well-known.

Third, criticality of an EAM in the present invention is irrelevant, as the appropriate inquiry focuses on the art of record only to make the combination. See M.P.E.P. § 2143, which sets out the requirements for obviousness and does not include a requirement for criticality in the claimed invention. For at least these reasons, such an assertion of interchangeability cannot be supported.

Moreover, the Office Action mentions cost, space, and speed as criteria for choosing a modulator. Such criteria, however, do not overcome the express contradictory teaching of *Weis* nor the fact that such modification of *Weis* is undesirable. Thus, one of ordinary skill in the art would not be motivated to make the proposed modification. Therefore, the 35 U.S.C. §103(a) rejection of claims 1-3, 5-15, and 17-23 is incorrect and should be withdrawn.

B. Failure to Teach or Suggest All Claim Limitations

Claim 15 recites, in part, “concurrently modulating said electrical signal by interacting with said input light beam using electroabsorption modulation.” *Weis* does not teach or suggest that feature, as it only teaches modulating a light signal. See, e.g., Abstract of *Weis*. It should also be noted that the Final Action does not point to any portion of *Weis* to teach or suggest this feature in rejecting claim 15, nor does it respond to this argument, which Applicant presented in the last response. Thus, *Weis* does not teach or suggest each and every feature of claim 15.

Dependent claims 17-21 each depend either directly or indirectly from independent claim 15, respectively, and, thus, inherit all of the limitations of claim 15. Thus, *Weis* does not teach or suggest all claim limitations of claims 17-21. It is respectfully submitted that

dependent claims 17-21 are allowable at least because of their dependence from claim 15 for the reasons discussed above. Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejection of claims 15 and 17-21 is respectfully requested.

V. Conclusion

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 50-1078 , under Order No. 10040010-1 from which the undersigned is authorized to draw.

Dated: January 26, 2006

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as Express Mail, Airbill No. EV482723922US, in an envelope addressed to: MS AF, Commissioner for Patents, P.O.Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Dated: January 26, 2006

Signature: Donna Forbit
Donna Forbit

Respectfully submitted,

By 

Michael A. Papalas

Registration No.: 40,381

Attorney for Applicant

(214) 855-8186